**PGDM, Batch 2018-20**
**Managerial Economics**
**Subject Code DM 104**
**Batch 2018-20**
**Trimester – I, End-Term Examination: September 2018**

**Time allowed: 2.5 Hours** **Max Marks: 50**

Roll No: _____

**Instruction:** Students are required to write Roll No on every page of the question paper, writing anything except the Roll No will be treated as **Unfair Means.** In case of rough work please use answer sheet.

| Sections | No. of Questions to attempt | Marks | Marks |
|---|---|---|---|
| A | 3 out of 5 (Short Questions) | 5 Marks each | 3*5 = 15 |
| B | 2 out of 3 (Long Questions) | 10 Marks each | 2*10 = 20 |
| C | Compulsory Case Study | 15 Marks | 15 |
| | | **Total Marks** | **50** |

**Section A: Please attempt any three out of the five given questions (5 marks each)**

Section A

1) Do fixed costs refer to the short run or long run. Why? What should be the shape of the average fixed cost?
2) Discuss economies of scale. How does this relate to returns to scale.
3) Suppose that at the average household income of Rs.200,000, the price of diesel being Rs.60 per litre, the quantity demanded is 100 million litres a week. If the price is increased to Rs.65 per litre, the quantity demanded would fall to 78 million litres per week. If the household income increases to Rs. 210,500 per year, quantity demanded would rise to 108 million litres a week.
   (a) Calculate the own price elasticity of demand.
   (b) Find the income elasticity of demand.

4) A consumer has an income of Rs.24. He wishes to spend this income on three different goods X,Y and Z. The prices are Px = Rs.2, Py=Rs.3 and Pz = Rs 5. The marginal utility schedules are as follows:

| Units | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| MU of X | 30 | 20 | 16 | 8 | 6 | 4 |
| MU of Y | 24 | 15 | 9 | 6 | 3 | 1 |
| MU of Z | 15 | 10 | 8 | 5 | 1 | 0 |

   What is the optimal mix of X, Y and Z that the consumer should purchase?
5) Discuss the properties of an indifference curve? How would be the indifference curves of substitutes and complements be different?

**Section B: Please attempt any two out of the three given questions: (10 marks each)**

1) Does perfect competition lead to a more efficient use of society's resources than monopoly? Explain
2) On what does the U shape of the SAC and LAC curves depend? Discuss
3) What do isoquants refer to – the short run or the long run? And why? What does the shape of an isoquant show? Explain its importance in managerial economics. Can isoquants intersect? Why?

**Section : C Case Study (15 marks)**

**Estimating and Forecasting the U.S. Demand for Electricity**

Estimating and forecasting the demand for electricity is very important since it takes many years to build capacity to meet future needs. One such estimate is provided by Halvorson, who used multiple regression analysis to estimate the market demand equation for electricity with cross-sectional data transformed into natural logarithms for the 48 contiguous states in the United States.

Using the estimated demand equation, public utilities could forecast the growth in the demand for electricity in the United States so as to adequately plan new capacity to meet future needs. For example, if we assume that per capita income grows at 3 percent per year, the price of gas at 20 percent per year, the number of customers at 1 percent per year, and the price of electricity at 4 percent per year, we can forecast that the demand for electricity for residential use in the United States will expand at a rate of 2.43 percent per year.

$$Q = (0.714)(3\%) + (0.159)(20\%) + (1.000)(1\%) - (0.974)(4\%)$$
$$= 2.142 + 3.180 + 1.000 - 3.896$$
$$= 6.322 - 3.896 = 2.426$$

With different projections on the yearly growth in per capita income, the price of gas, the number of customers in the market, and the price of electricity, we will get correspondingly different results. The above results are shown in Figure 31-1, where Po and Qo are the original price and quantity of electricity demanded in the United States on the hypothetical demand curve Do in the base period (say the current year). Demand curve D' results from the projected increase in per capita income, D" from the increase in the price of gas, and $D_1$ from the increase in the number of customers in the market .Thus, $D_1$ takes into account or reflects the cumulative effect of all the growth factors considered Were the price of electricity to remain constant, the demand for electricity would rise by 6.322 percent per year (given by the movement from point A on Do to point G on $D_1$ in the figure). The projected increase in the price of electricity by 4 percent per year (from Po to $P_1$), by itself will result in a decline in the quantity demanded of electricity by 3.896 percent (the movement from point G to point F on $D_1$). The net result of all forces at work gives rise to a net increase in Q of 2.426 percent per year (the movement from point A on Do to point F on $D_1$).

Until the mid-1990s, when the deregulation of the electricity market started in the United States, the nation's regulatory commissions set low electricity rates, and this discouraged the building of new power plants. Electric power companies simply preferred charging higher electricity rates at times of peak demand rather than building the new plants.

All this began to change during the past decade as the electricity market started to be deregulated. Botched up deregulation, however, led to widespread electricity shortages, blackouts or brownouts, and sharply higher electricity prices in California and other western states during 2000 and 2001. This in turn slowed down, put on hold, or even reversed the deregulation process.

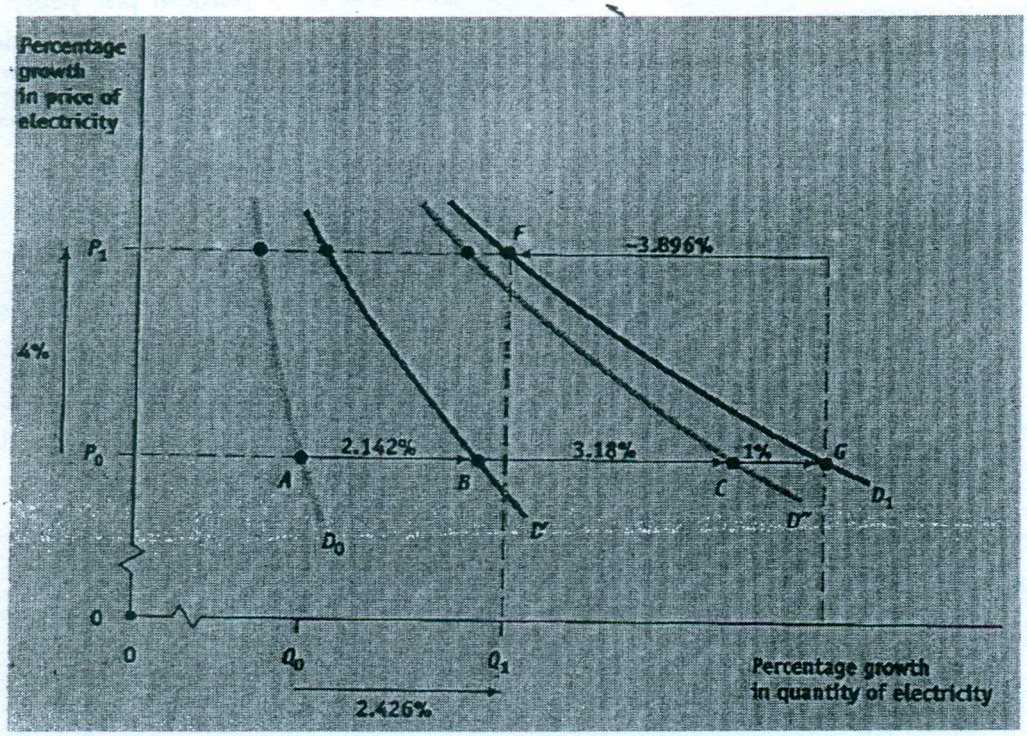


FIGURE 31-1 Forecast of Electricity in the United States Po and Qoare the original price and quantity of electricity demanded in the United States on demand curve Do, D' results from projecting a 3 percent increase in per capita incomes, D" from also protecting a 20 percent increase in the price of gas, and $D_1$ from projecting a 1 percent increase in the number of customers in the market as well. If the price of electricity also increases by 4 percent (from Po to $P_1$), the demand for electricity increases by 2.426 percent per year (the movement from point A on Do to point F on $D_1$).

In August and November 2003, the Northeast was hit by huge electric power blackouts. Since then, however, enough new capacity came on line to eliminate shortages and keep electricity prices relatively low in the United States. The nation does need to build from 1,300 to 1,900 new power plants to meet future demand, which is expected to grow by 45 percent by the year 2020. Since it takes from 6 to 12 years to build a new plant, electric power companies have no time to waste.

Demand studies have been conducted for practically every major commodity in the United States and are widely used by business people and managers to forecast demand. This, in

turn, greatly affects investments in new plants and equipment and the general level of economic activity.

**Questions for Analysis and Class Discussion**

1. Why is it important to estimate and forecast electricity demand many years in advance? How is it done?
2. Does the passage indicate that (a) the demand for electricity is price elastic? (b) Electricity is a necessity?
3. Using the demand equation, forecast the demand for electricity if per capita income increases at 2 percent per year, the price of gas falls by 1 percent per year, the number of customers increases at 1.5 percent per year, and the price of electricity increases by 2 percent per year.